EPA United States Environmental Protection Agency

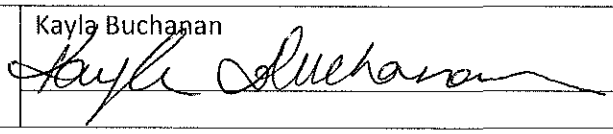
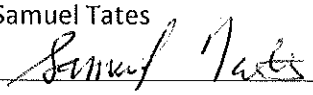
Region 6 Compliance Assurance and Enforcement Division

INSPECTION REPORT

Inspection Date(s):	03/20/2018- 03/21/2018		
Media:	Air		
Regulatory Program(s)	RMP		
Company Name:	**North Texas Municipal Water District**		
Facility Name:	**North Texas Municipal Water District Wylie Water Treatment Plant**		
Facility Physical Location:	810 N. Highway 78		
(city, state, zip code)	Wylie, TX 75098		
Mailing address:	P.O. Box 2408		
(city, state, zip code)	Wylie, TX		
County/Parish:	Collin County		
Facility Contact:	Joshua Hathaway	Environmental Compliance Manager	
	jhathaway@ntmwd.com		
FRS Number:	110064214584		
Identification/Permit Number:	N/A		
Media Number:	RMP # 100000154584		
NAICS:	22132		
SIC:			

Personnel participating in inspection:

Buford Green	Wylie Water Treatment Plant	Assistant Water Systems Manager	972-442-5405
Patrick Chadwick	Wylie Water Treatment Plant	Water Treatment Manager	469-626-4406
Jim Shirley	Wylie Water Treatment Plant	Chief Information Officer	469-626-4326
Cody Graham	Wylie Water Treatment Plant	Professional Engineer	469-626-4404
Billy George	Wylie Water Treatment Plant	Assistant Deputy Director – Water System	972-442-5405
Joshua Hathaway	Wylie Water Treatment Plant	Environmental Compliance Manager	214-223-6481
Michael Walker	Wylie Water Treatment Plant	Senior Environmental Health & Safety Specialist	469-626-4645
Samuel Tates	Environmental Protection Agency	Section Chief	214-665-2243
Kayla Buchanan	Environmental Protection Agency	Inspector	214-665-6480

EPA Lead Inspector Signature/Date		
EPA Lead Inspector Signature/Date	Kayla Buchanan 	Date 5/15/18
Supervisor Signature/Date		
Supervisor Signature/Date	Samuel Tates 	Date 5/15/2018

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

Samuel Tates, Chemical Accident Section Chief, and I, Environmental Protection Agency (EPA) Region 6 inspector Kayla Buchanan, arrived at the North Texas Municipal Water District's Wylie Water Treatment Plant (North Texas Wylie) at 9:30 AM on March 20, 2018, for an announced inspection. We met with several representatives of the North Texas Municipal Water District at the Opening Conference ***(see Appendix 1).*** I presented my credentials to all attendees of the opening conference and informed them that this was an EPA inspection to determine North Texas Wylie's compliance with Clean Air Act (CAA) Sections 112(r)(1) and 112(r)(7). The scope of the inspection was a partial compliance evaluation of the facility pursuant to 40 CFR Subpart 68 – Chemical Accident Prevention Provisions. The facility does not have union representation.

FACILITY DESCRIPTION

North Texas Wylie is an entity that treats raw water to create potable water for the North Texas area. It is located at 810 N. Highway 78, Wylie, TX 75098. The facility is owned and operated by the North Texas Municipal Water District (NTMWD) and employs 198 full time employees.

Section II – OBSERVATIONS

On Wednesday, March 21, 2018, I conducted a walk-through of the facility and was accompanied by North Texas Wylie representatives to observe the covered processes, equipment, operations, and emergency equipment.

40 C.F.R. Part 68 – CHEMICAL ACCIDENT PREVENTION PROVISIONS

Subpart A – General

40 C.F.R. § 68.10 Applicability – North Texas Wylie is a non-Title V stationary source that has more than a threshold quantity of chlorine and ammonia, both of which are regulated substances in its process streams; therefore, these regulations are applicable. North Texas Wylie re-submitted a Risk Management Plan (RMP) on March 16, 2016, that described the processes containing regulated chemicals held at more than a threshold quantity. This facility is not subject to the Occupational Safety and Health Administration's (OSHA) Process Safety Management (PSM) Standard (29 CFR 1910.119), categorizing them as a Program 2 facility.

40 C.F.R. § 68.12 General requirements - I reviewed the March 16, 2016, re-submission of North Texas Wylie's RMP and it listed the toxic chemicals for its Program 2 process.

40 C.F.R. § 68.15 Management – I reviewed North Texas Wylie's management system**.** The facility assigned a qualified person or position that has the overall responsibility for the development, implementation, and integration of the risk management program elements.

Subpart B – Hazard Assessment

40 C.F.R. § 68.20 Applicability – North Texas Wylie is a Program 2 stationary source subject to this subpart; therefore, it is required to prepare a worst-case release scenario analysis and complete the five-year accident history.

40 C.F.R. § 68.22 Offsite Consequence Analysis (OCA) Parameters – North Texas Wylie utilizes EPA RMP*Comp ™ software and the RMP Offsite Consequence Analysis Guidance to ensure the OCA parameters are met. I reviewed the facility's OCA documentation to ensure the data was accurate and up to date.

40 C.F.R. § 68.25 Worse-case release scenario analysis – North Texas Wylie identified and analyzed at least one worst-case scenario for each regulated toxic substance held in a covered process using the parameters specified in the regulation

40 C.F.R. § 68.28 Alternative Release Scenario Analysis – North Texas Wylie identified and analyzed at least one alternative release scenario for each regulated toxic substance held in a covered process using the parameters specified in the regulation.

40 C.F.R. § 68.30 Defining offsite impacts- Population – North Texas Wylie estimated the population within a circle with its center at the point of the release and a radius determined by the distance to the endpoint; likewise, they used the most recent Census data to estimate the population potentially affected.

40 C.F.R. § 68.33 Defining offsite impacts- Environment – North Texas Wylie listed in its RMP environmental receptors within a circle with its center at the point of the release and a radius determined by the distance to the endpoint as defined in § 68.22(a) of this part; likewise, they relied on U.S. Geological Survey (U.S.G.S.) data to identify environmental receptors.

40 C.F.R. § 68.36 Review and Update – North Texas Wylie reviews and updates its OCA once every five years.

40 C.F.R. § 68.39 Documentation- North Texas Wylie maintains records on the offsite consequence analyses, as required by the rule.

40 C.F.R. § 68.42 Five-year accident history- North Texas Wylie is required to include in its five-year accident history all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering in place, property damage, or environmental damage. The facility identified and included four (4) incidents that met this qualification in its accident history. Each of the incidents resulted in an injury due to a release of chlorine. I queried the National Response Center (NRC) database to ensure additional releases from the facility that could possibly be included in the facility's five-year accident history were not omitted. The data required by the regulation for each accidental release was documented in a report.

Subpart C - Program 2 Prevention Program

40 C.F.R. § 68.48 Safety Information – I reviewed North Texas Wylie's compiled safety information related to the regulated substances, processes, and equipment including: (1) Material Safety Data Sheets (MSDS); (2) Maximum intended inventory of equipment in which the regulated substances are stored and processed (3) Safe upper and lower temperatures, pressures, flows, and compositions; (4) Equipment specifications; and (5) Codes and standards used to design, build and, operate the process. All of the safety information was up to date and met the requirements of the regulations.

North Texas Wylie utilizes the following codes and standards to ensure its process is designed in compliance with recognized and generally accepted good engineering practices:

- Uniform Fire Code (UFC)
- National Electrical Code (NEC)
- Chlorine Institute Standards (CIS)
- Compressed Gas Association (CGA) Standards
- American Society for Testing and Materials (ASTM) Standards
- American National Standards Institute (ANSI) Standards
- American Society of Mechanical Engineers (ASME) Standards

North Texas Wylie's primary source for standards in the use and the handling of chlorine is the Chlorine Institute's publication, *Chlorine Basics*.

40 C.F.R. § 68.5 Hazard Review – I reviewed North Texas Wylie's two most recent hazard reviews, which were conducted on April 28, 2017, and May 2, 2012. The hazard reviews identified the hazards associated with the process and regulated substances, opportunities for equipment malfunctions or human errors that could cause an accidental release, safeguards used/needed to control the hazards or prevent equipment malfunctions, and the steps used to detect/monitor releases.

North Texas Wylie utilized the what/if checklist method to conduct its hazard review. The facility determined this method to be appropriate due to the availability of checklists and what/if questions from guidance documents.

North Texas Wylie documented the results of the review and ensured that problems identified were resolved in a timely manner. The hazard review is updated at least every five years or whenever a major change occurs.

40 C.F.R. § 68.52 Operating Procedures – This regulation requires North Texas Wylie to prepare written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process. I reviewed North Texas Wylie's operating procedures. The operating procedures addressed each of the following: (1) initial startup; (2) normal operations; (3) temporary operations; (4) emergency shutdown; (5) normal operations; (6) startup following shutdown; and (8) equipment malfunctions; however, the procedures failed to address consequences of deviation and the steps to correct or avoid the deviations (**AOC # 1)** (***see Appendix 2***). North Texas Wylie has developed an SOP template and all old written operating procedures will be converted to this format. I recommended that the facility review this template because it also failed to address consequences of deviation (***see Appendix 3*****).**

The regulation also requires North Texas Wylie to develop standard operating procedures for equipment checks. The facility has an equipment checklist for its chlorine and ammonia system inspections (***see Appendix 4***) however, the facility does not have any written procedures that instruct employees on how to complete these equipment checks. When I asked about this, I was told that a verbal lesson is provided to employees and no written procedures have been developed (**AOC # 2**).

40 C.F.R. § 68.54 Training – This regulation requires refresher training to be provided to employees operating the process at least every three years, and more often if necessary, to ensure that the employee understands and adheres to the current operating procedures of the process.

I reviewed training records for North Texas Wylie employees. The records reviewed showed that refresher training was not provided every three years in accordance with the regulation (**AOC #3**) (*Appendix 5*) *

40 C.F.R. § 68.56 Maintenance - North Texas Wylie uses procedures and instructions provided by covered process equipment vendors and industry codes as the basis for stationary source maintenance procedures. The facility utilizes Maximo software to notify employees when preventative maintenance needs to be performed.

The regulation requires North Texas Wylie to train its maintenance workers in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employees job tasks. Training conducted under Federal or state regulations, under industry-specific standards or codes, or training conducted by covered process equipment vendors can be used to demonstrate compliance; however, three (3) maintenance workers are on staff at the facility and, only one has a Water Operations License from the Texas Commission on Environmental Quality. The two non-licensed maintenance workers only assist in maintenance activities. North Texas Wylie stated informal training for procedure's applicable to the employee's job tasks is provided to the maintenance staff by the manufacturers of the process equipment; however, the facility was unable to provide official training records (**AOC #4**).

The regulation requires maintenance contractor companies doing work for North Texas Wyle to ensure that their contract maintenance employees are trained to perform the maintenance procedures. I reviewed the contactors' statements of work for the North Texas Wylie facility and each included language ensuring contract maintenance employees are trained.

40 C.F.R. § 68.58 Compliance Audit – I reviewed the facility's two most recent compliance audits, which were conducted May 2, 2012, and May 5, 2015. North Texas Wylie uses a contractor, Municipal H2O to conduct its compliance audit. This same contractor is responsible for completing its RMP. The compliance audits evaluated the facility's compliance with the provisions of this subpart to verify that the procedures and practices developed under the rules are adequate and are being followed as required.

40 C.F.R. § 68.60 Incident Investigations – The regulation requires facilities to investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release. I reviewed the incident investigation reports for each of the incidents included in the facility's five-year accident history. North Texas Wylie initiated the incident investigation within 48 hours following the incident. The facility prepared a report at the conclusion of the investigation, which included the date of the incident, the date the investigation began, a description of the incident, factors that contributed to the incident, and recommendations resulting from the investigation. North Texas Wylie promptly addressed and resolved the investigation's findings and recommendations and documented the corrective actions**.** North Texas

Wylie has developed a standard incident investigation report template to ensure the requirements of the regulation are being met.

In addition to the incidents included in the facility's five-year accident history, I reviewed a July 2017 incident that involved an ongoing release of 16,472 pounds of ammonia to the atmosphere from a tank in Plant III (**AOC #5**). As a result, North Texas Wylie staff evacuated the immediate area of the ammonia tank, the Wylie Fire Department evacuated Plant III and temporarily closed Skyline Road, and the EPA deployed On-Scene Coordinators (OSCs) to conduct air monitoring. A gasket failure caused the release, and the lack of a drainage valve on the bottom of the tank prolonged mitigation. Gaskets on the remaining ammonia tanks at the plant have been visually inspected, but not replaced. Because of this incident, North Texas Wylie has hired an industry expert to complete a review of its ammonia storage and feed system. The industry expert had several findings stemming from its analysis, including both code and safety issues, as well as non-standard/operational issues (where the operability and maintainability could be improved by using industry standard designs and equipment). Recommendations from this review included several improvements to the ammonia system, including gasket replacement, instrument modification and replacement, piping modifications, and other miscellaneous improvements. North Texas Wylie has developed a scope of work to undertake these improvements and is waiting for approval from the North Texas Municipal Water District Board of directors to proceed.

Subpart E- Emergency Response

40 C.F.R. § 68.90 Applicability- North Texas Wylie employees do not serve as first responders to accidental releases of regulated substances when they occur.

40 C.F.R. § 68.95 Emergency response program- As a non-responding entity, North Texas Wylie is not required to have an emergency response program; however, the facility is required to ensure it is included in its community emergency response plan developed under 42 U.S.C. 11003, coordinates response actions with the local fire department, and have appropriate mechanisms in place to notify emergency responders when there is a need for a response. North Texas Wylie maintains an emergency response plan that includes all of the aforementioned information, which meet the requirements of the regulation.

Subpart G- Risk Management Plan

40 C.F.R. § 68.190 Updates- The RMP for this facility was re-submitted on March 16, 2016. The next RMP submission is due by March 16, 2021.

40 C.F.R. § 68.195 Required corrections- An update is required and subsequent updates are required every five years, if the facility has new accident history information, or has a change in emergency contact information. Per this requirement, North Texas Wylie has submitted several corrections to update both its emergency contact information and accident history. The most recent update was June 5, 2017.

Section III – AREAS OF CONCERN

1. **40 C.F.R. § 68.52(a)** requires the owner or operator shall prepare written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process. Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as a basis for a stationary source's operating procedures. (b) The procedures shall address the following: (1) Initial startup; (2) Normal operations; (3) Temporary operations; (4) Emergency shutdown and operations; (5) Normal shutdown; (6) Startup following a normal or emergency shutdown or a major change that requires a hazard review; (7) Consequences of deviations and steps required to correct or avoid deviations; and (8) Equipment inspections. North Texas Wylie failed to address consequences of deviations and steps required to correct or avoid deviations in its standard operating procedures.

2. **40 C.F.R. § 68.52(a)** requires the owner or operator shall prepare written operating procedures that provide clear instructions or steps for safely conducting activities associated with each covered process consistent with the safety information for that process. Operating procedures or instructions provided by equipment manufacturers or developed by persons or organizations knowledgeable about the process and equipment may be used as a basis for a stationary source's operating procedures. (b) The procedures shall address the following: (1) Initial startup; (2) Normal operations; (3) Temporary operations; (4) Emergency shutdown and operations; (5) Normal shutdown; (6) Startup following a normal or emergency shutdown or a major change that requires a hazard review; (7) Consequences of deviations and steps required to correct or avoid deviations; and (8) Equipment inspections. North Texas Wylie failed to prepare written procedures for its equipment checks.

3. **40 C.F.R. § 68.54(d)** Refresher training shall be provided at least every three years, and more often if necessary, to each employee operating a process to ensure that the employee understands and adheres to the current operating procedures of the process. North Texas Wylie failed to provide refresher training at least every three years.

4. **40 C.F.R. § 68.56(b)** requires the owner or operator to train or cause to be trained each employee involved in maintaining the on-going mechanical integrity of the process. To ensure that the employee can perform the job tasks in a safe manner, each such employee shall be trained in the hazards of the process, in how to avoid or correct unsafe conditions, and in the procedures applicable to the employee's job tasks. North Texas Wylie failed to train its maintenance staff in the procedures applicable to the employee's job tasks.

5. **112(r)(7) (General Duty Clause)** requires the owner or operator to identify hazards facility may present from accidental releases of hazardous substances, design and maintain a safe facility, and minimize the consequences of accidental releases which do occur. North Texas failed to minimize the consequences of the accidental release that occurred in July 2017.

Section IV – FOLLOW UP

North Texas Wylie provided an initial response to the areas of concerns to EPA on May 14, 2018.

Section V – LIST OF APPENDICES

Appendix 1 - Opening conference sign-in sheet
Appendix 2 - North Texas Wylie Standard Operating Procedure Examples
Appendix 3 - North Texas Wylie Standard Operating Procedure Template
Appendix 4 – North Texas Wylie Maintenance Checklist
Appendix 5 – Training Records*
*Due to the volume of records, and to preserve employee indemnity, this appendix will not be included in the online version of this report.

Appendix 1: Opening Conference Sign-In Sheet

North Texas Wyle Sign In Sheet

Name	E-mail	Phone #
Buford Green	bgreen@ntmwd.com	972 442 5405
Patrick Chadwick	pchadwick@ntmwd.com	469-626-4406
Jim Shirley	jshirley@ntmwd.com	469 626 4325
Cody Graham	cgraham@ntmwd.com	469 626 4404
Jeff Striplin	jstriplin@ntmwd.com	469-626-4409
Billy George	bgeorge@ntmwd.com	469-626-4330
Joshua Hathaway	jhathaway@ntmwd.com	214-223-6481
Michael Walker	mwalker.jr@ntmwd.com	469-316-5704
Samuel Tates	tates.samuel@epa.gov	214-665-2243
~~Buford Green~~	~~bgreen@ntmwd.com~~	~~972 442 5405~~
~~Richard Darr~~	~~rdarr@ntmwd.com~~	

Appendix 2: North Texas Wylie Standard Operating Procedure Examples

NTW-7(3)

Disconnection And Connection of Chlorine Rail Car Loop
Standard Operating Procedure

PPE NEEDED

- Respirator
- Gloves
- SCBA Standing by in case of an emergency

TOOLS NEEDED

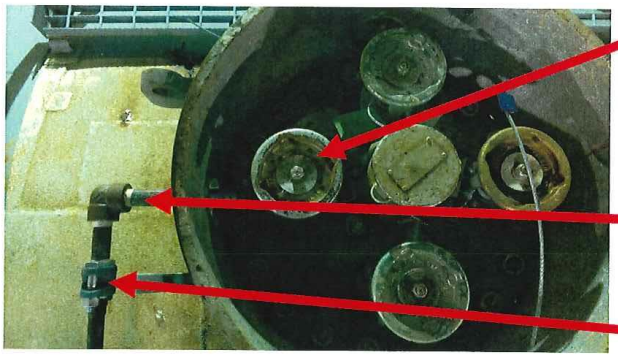
- Pipe Wrench
- Cable Cutters
- Flathead Screwdriver
- 1 – 1-1/16" Wrench
- 1 – 15/16" Wrench
- Wire Brush
- Teflon Tape
- 2 – Lead Washers
- Ammonia Bottle(for checking for leaks)

1

Disconnection And Connection of Chlorine Rail Car Loop
Standard Operating Procedure

DISCONNECTING THE RAIL CAR LOOP

1. Don respirator and gloves.
2. Verify rail car valve is closed. (see pic below)
3. Verify that the ball valve on the tree is closed. (see pic on page 3)
4. Loosen bolts Union A. Use the 1-1/16" wrench for the bolt and the 15/16" wrench for the nut.
5. Use ammonia bottle to check at the union for chlorine that may be trapped in the loop. Spray the ammonia fumes on the union. A white cloud will appear from the chlorine and ammonia fumes if there is a leak. If there is no chlorine leak, proceed with disconnection procedure.
6. Loosen bolts on Union B.
7. Remove nuts and bolts from both unions and remove the loop.
8. Cap Union B on the chlorine tree and remove the stub out from the rail car. The pipe wrench will be used for this step.
9. Insert plug into the outlet on the rail car valve.
10. Close the lid on the rail car and install a new seal on the lid pin.
11. Raise catwalk and secure it.
12. Remove rail car chock blocks and caution sign.
13. Exit the Chlorine Rail Car Building. Respirator and gloves may be removed at this time.
14. Call in empty rail car number to the Control Room and inform them that the car is ready for pickup.



NTW-1 (4)

Disconnection And Connection of Chlorine Rail Car Loop
Standard Operating Procedure

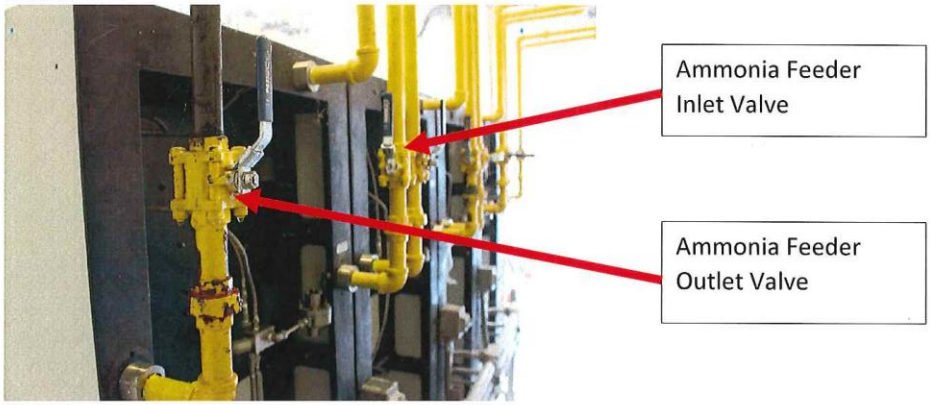
CONNECTING THE RAIL CAR LOOP

1. Don respirator and gloves.
2. Lower the catwalk and secure it to the rail car.
3. Remove the seal from the rail car lid and open the lid. Use the cable cutters to cut the seal.
4. Using the pipe wrench, remove the plug from the rail car valve.
5. Remove cap from Union B on the chlorine tree.
6. Clean stub out threads with the wire brush.
7. Wrap the stub out threads with Teflon tape and install the stub out on the rail car valve using the pipe wrench.
8. Using the flathead screwdriver, remove old lead gaskets from both union ends.
9. Install new lead gaskets on both union ends.
10. Place chlorine loop into place and insert the bolts into both unions.
11. Place nuts on the bolts in the unions and hand tighten.
12. Use the 1-1/16" and 15/16" wrenches to tighten the union nuts and bolts.
13. Slightly open and then close the ball valve on the chlorine tree.
14. Spray the unions with the ammonia fumes to check for leaks.
15. If leaks are not found, open the ball valve on the tree and retest for leaks.
16. Exercise the rail car valve to make sure that it can be operated by hand, leave the valve closed, and close the rail car lid.
17. Place "Rail Car Connected" sign on the rail car.
18. Exit the Chlorine Rail Car Building. Respirator and gloves may be removed.
19. Call the Control Room with the rail car number, inform them that it has been connected, and that the rail car is now in "Standby".

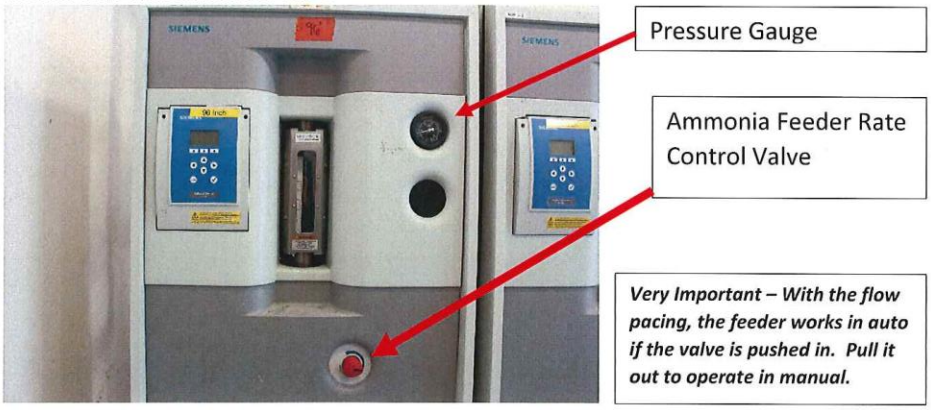
Ammonia Feeder Operation

Standard Operating Procedure

1. The ammonia system is a pressure system. When turning on ammonia at the feeders, first make sure that the inlet and outlet valves are open on the ammonia feeder. When you are facing the back of the ammonia feeder, the inlet valve is on the right and the outlet(discharge) is on the left.



2. After you have verified that the inlet and outlet valves are open, adjust your ammonia as needed with the feed control valve.



Ammonia Feeder Operation

Standard Operating Procedure

3. When turning off your ammonia feeder, since it is a pressurized system, close the inlet valve first(refer to the first pic). Wait for the pressure to drop off(refer to second pic), the ammonia feeder to stop feeding and then you may close the outlet/discharge valve if necessary(refer to first pic for valve).

4. Under no circumstances are the ammonia bulk tanks to be switched without approval of the Lead Operator or Supervisor. Make sure the Lead Operator, mechanic, or Supervisor are present for the switching of the valves on the ammonia bulk tanks.

5. Safety is our main concern. We do not want the wrong valves opened or closed, nor do we want to have any gas being trapped in the system.

6. Always check with your Lead Operator or Supervisor on duty if you have any questions or concerns on operation of the system.

Appendix 3: North Texas Wylie Standard Operating Procedure Template

(SOP name) – SOP NTW-S Revision # ? Effective date

North Texas Municipal Water District (NTMWD)
Wylie WTP Operations

STANDARD OPERATING PROCEDURES

SOP Title

Address Of Facility
Phone number

APPROVALS :

System Manager, Water _____ Date _____

Water Treatment Plant Supervisor _____ Date _____

Trainer/Special Projects Engineer/Product Specialist _____ Date _____

Page 1 of 4

Distribution List:	NTMWD Network

Revision #	Effective Date	Description of Change
#.#	{last rev date}	Last revision
#.#	{next rev date}	{input general statement of changes}

Summary of Changes Made to Current Revision

Section Number	Item	Change
#.#	#	{input brief statement of changes per section per item}

Table of Contents

1 SCOPE, APPLICATION, AND SUMMARY

This {input what type of document this is and what will contained within this document.}

{Give a brief description why and how this activity is needed and applicable.}

{Give a brief summary of who owns/is responsible for this procedure and how.}

2 SAMPLE COLLECTION

List any sampling required in this procedure:

Sample	Container	Time

3 SAFETY

Safety is an important aspect of Water Operations' activities as outlined in detail by NTMWD Safety Policies. All operations' staff must familiarize themselves, understand, and comply with all safety policies. Each employee is directly responsible for complete awareness of all health hazards associated with his/her respective job duties. Safety information is readily available by appropriate SDS, NTMWD Safety Policy, and approved training sessions either in-house or external.

Operations' personnel performing this SOP are required to wear and utilize personal protective equipment (PPE) including but not limited to safety eye protection, hard hats (where required), high visibility safety vest (where required), hearing protection (where required), respirators (when needed), and foot protection (steel toed boots) for traction and reducing possible foot injuries.

{List any special considerations with the chemical hazards performed in this procedure with steps to help reduce those hazards.}

4 EQUIPMENT AND SUPPLIES

{List any equipment, tools, meters, or supplies needed to complete this procedure.}

5 PROCEDURES

5.1 Step One

{List any step-by-step procedures.}

5.2 Step Two

{List any step-by-step procedures.}

5.3 Step Three

List any step-by-step procedures.}

6 REFERENCES

1. {List all applicable references}

7 APPENDIX

{graphs and flow charts where applicable} NOTE: this section can be eliminated if nothing exists for SOP clarification.

Appendix 4 – North Texas Wylie Maintenance Checklist

North Texas Municipal Water District

Chlorine and Ammonia System Inspection

NTW-11

Chlorine System **Plant**_____

Equipment	Inspection	Check	Maintenance	Check
Whips	Bi-Weekly		Replaced Annually	
Unloading Platform	Bi-Weekly		Yearly	
Platform Valves	Bi-Weekly		Yearly	
Pressure Gauges	Bi-Weekly		Yearly	
Liquid Piping	Bi-Weekly		Yearly	
Chlorine Evaporators	Weekly		Yearly	
Pressure Regulators	Weekly		Yearly	
Vacuum Regulators	Weekly		Yearly	
Chlorinators	Weekly		Yearly	
Leak Detectors	Weekly		Yearly	
Exhaust Fans and Vents	Weekly		Yearly	
Vacuum Piping	Bi-Weekly		Yearly	
Injectors	Weekly		Yearly	

*Comments or Notes:*_____

_____

_____

Ammonia System

Equipment	Inspection	Check	Maintenance	Check
Ammonia Storage tanks	Bi-Weekly		Yearly	
Pressure Relief Valves	Monthly		Replaced every 5 years	
Ammonia Heaters	Bi-Weekly		Yearly	
Loading Valves	Monthly		Yearly	
Isolation Valves	Bi-Weekly		Yearly	
Ammonia Pressure Regulators	Weekly		Yearly	
Ammoniators	Weekly		Yearly	
Leak Detectors	Weekly		Yearly	
Exhaust Fans and Vents	Weekly		Yearly	
Ammonia Pressure Piping	Bi-Weekly		Yearly	

*Comments or Notes:*_____

_____

_____

Ensure NH3 Tanks are painted and corrosion free. Verify NH3 area is clean and free of debree.	
Verify windsocks are in place , in good condition are are visible from all vantage points on site.	
Verify eyewash stations and showers are within 10' of covered process areas and are in good condtion.	

Inspected By:_____ Date:_____